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THESIS

**THE IMPACT OF FINANCIAL INCENTIVES ON
BENEFICIARY DEMAND BEHAVIOR:
CONSIDERATIONS FOR DOD HEALTH CARE REFORM**

by

ANTOINETTE A. WHITMEYER

December, 1993

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**The Impact of Financial Incentives on
Beneficiary Demand Behavior:
Considerations for DOD Health Care Reform**

by

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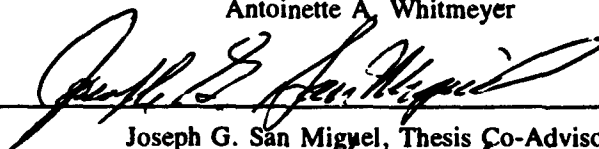
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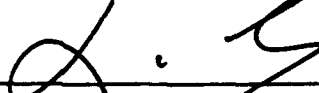
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ABSTRACT

Rising health care costs are essentially rooted in a health care system based upon adverse economic incentives, which encourage both providers and patients to act with little regard to costs. To effectively control demand and utilization of health services, and thus costs, a health care system should be structured to provide incentives which motivate all participants to seek cost-effective care. This study examines the theory and reviews the influence of financial incentives upon patient demand behavior. Utilization data from the CHAMPUS Reform Initiative (CRI) are analyzed in terms of the CRI program incentive structures in order to draw conclusions regarding the influence of incentives upon beneficiary demand behavior. Based upon the CRI analysis and descriptions of financial incentive-based models of demand behavior as described in the literature, suggestions for DOD health care reform are offered.

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CHAPTER I. INTRODUCTION

A. THE U.S. HEALTH CARE SYSTEM AND THE IMPETUS FOR REFORM

The U.S. health care system is in a state of crisis. As health care spending continues its upward spiral, a growing majority of Americans are becoming dissatisfied with the system and demanding reforms in health care financing and delivery. In a 1990 *Los Angeles Times* poll, nearly three-quarters of the respondents favored a national comprehensive reform plan, even if it meant an increase in their taxes [Ref. 1:p. 41].

In 1990, 12% of the nation's Gross Domestic Product (GDP) was spent on health care. The Congressional Budget Office (CBO) projects that health care spending will represent 18% of the nation's GDP by the year 2000 if significant policy changes are not implemented [Ref. 2:p. 1].

While most economists do not advocate limiting health care spending to a specific percentage of the GDP, the rapid increase is cause for concern for several reasons. The most important reason is that this increased spending has not improved health outcomes as currently measured. Quite simply, overall health care costs have exceeded their value. Compared to other industrialized countries, the U.S. spends a greater

proportion of its resources on health but does not appear to have a healthier population [Ref. 2:p. 2].

Another reason for concern is that of opportunity cost. As more of our economy is devoted to health care spending, less resources are available for investment in other areas. Not surprisingly, increasing health care costs are frequently blamed for the decreasing competitiveness of U.S. industries and sluggish recovery from the economic recession.

A third reason concerns the growing portion of the federal budget dedicated to health spending. Medicare and Medicaid are the fastest growing portions of the federal budget. If significant reforms are not made in these programs, the CBO estimates that federal health care spending will increase from 17.5% to 23.6% of the federal budget between 1993 and 1998 [Ref. 3:p. 2]. The resulting increase in federal borrowing and the national debt would have a serious adverse impact upon our economy.

As a result of these concerns, health care reform has assumed an increasing urgency in our national economic and political rhetoric.

B. THE DOD HEALTH CARE SYSTEM

1. MHSS Overview

The Department of Defense (DOD) Military Health Services System (MHSS) is a complex health care delivery system that serves two concurrent missions: operational

wartime readiness and peacetime delivery of health care services.

The MHSS is funded by Congress as part of the National Defense Authorization Act. In Fiscal Year 1993, expenditures for the MHSS will represent almost 6% of the DOD budget and will exceed \$15 billion [Ref. 4:p. 122].

Although 8.5 million beneficiaries are eligible to receive health care benefits in the MHSS¹, it is estimated that only 4.4 million actually do so [Ref. 5:p. 2]. The remainder are believed to be using Medicare or private insurance.

The MHSS is typically defined as being composed of a direct and indirect care system. The direct care system is comprised of 148 hospitals, 554 medical clinics and 300 dental clinics [Ref. 4:p. 122]. The indirect care system is represented by CHAMPUS², which can be compared to a traditional fee-for-service insurance plan. The MHSS also operates several adjunct delivery systems such as NAVCARE and PRIMUS, and is in the process of conducting a plethora of managed care demonstration projects. Thus, as the MHSS continues to evolve as an integrated health care delivery system, the dichotomy of direct and indirect care systems is increasingly outmoded.

¹This figure represents those individuals enrolled in the Defense Eligibility Enrollment Reporting System (DEERS).

²Civilian Health and Medical Program of the Uniformed Services

As of October 1991, medical resources and programming responsibilities for all the military services were consolidated into a unified Defense Health Program under the leadership of the Assistant Secretary of Defense for Health Affairs, ASD(HA). This effort was designed to improve coordination between the services and better manage the MHSS medical mission [Ref. 4:p. 130].

2. Projections for Rising Costs

In spite of the Clinton Administration's proposed drawdown of active duty forces to 1.4 million by 1997, the CBO projects that peacetime mission health costs will increase 22% between the years 1993 and 1998 [Ref. 5:p. 6]. This increase is projected despite an overall seven percent decline in the total number of beneficiaries, and is based on: an increase in CHAMPUS use due to base closures, a seven percent per annum inflation rate for health care, and an estimated nine percent increase in the population of retirees and their dependents.

As a result of these increased cost projections, and because the MHSS is an integral part of the national health care system, DOD is also facing pressure for health care reform.

C. RISING HEALTH CARE COSTS AND THE INFLUENCE OF INCENTIVES

There are many reasons for the soaring health care costs that confront our nation and the MHSS. Commonly noted causes of medical cost escalation include: expanded use of higher-

cost medical technologies, third-party payment systems, increased utilization of services, and insufficient emphasis on preventive care.

These problems are essentially rooted in a health care system based upon bad economic incentives. That is, our health care system actually sends signals, incentives, that encourage individuals to act in a manner that is not economically efficient. Inefficient providers are rewarded on the same basis as efficient providers. Likewise, consumers who receive care from "extravagant providers are reimbursed on a similar basis as those who search out economical providers." [Ref. 6:p. 424]

Since the problem of soaring costs apparently stems from bad economic incentives, the solution appears to be "a revamped health care system where the incentives motivate everyone to pursue or provide cost-effective care." [Ref. 7: p. 1] In response, DOD health care reform efforts are leaning towards managed care networks and capitation-based resource allocation designed to encourage and provide more appropriate incentives for the MHSS to deliver health services in a more efficient and effective manner.

³In DOD's capitation-based resource allocation (budgeting) methodology, Commanders of MTFs would be responsible for providing health services to a defined population for a fixed dollar amount per beneficiary. ASD(HA) Memo 07 May 1993.

D. INCENTIVES AND INITIATIVES WITHIN DOD

1. Historical Incentive Structures in DOD

As stated above, to truly revamp the economy, efficiency and effectiveness of the health care system, appropriate incentives should be implemented for both providers and consumers of health care. Past approaches to contain cost growth within DOD, such as budgetary limitations, utilization review, and restrictions on capital expenditures, focused mainly on providers. As in the national health care system, reducing patient demand for care was not a major strategy [Ref. 8:p. 879]. Utilization of services within the Military Treatment Facility (MTF) was primarily controlled by limiting access. Excess, unsatisfied demand was shifted to CHAMPUS or outside the military health care system. Under managed care and capitation budgeting, commanders of MTFs will be responsible for providing a full spectrum of health services within their accountable network (MTF, CHAMPUS, Contract), so demand shifting will be a moot point. In this regard, provider incentives will be brought into line with program reform objectives. Therefore, economic incentives which address patient demand will become a factor of increased importance in controlling cost growth.

2. DOD Initiatives to Contain Cost Growth

The first and largest of DOD's initiatives to improve health care delivery and contain costs was the CHAMPUS Reform

Initiative (CRI). The CRI demonstration project, in effect since August 1988 in California and Hawaii, was a contractor-managed effort designed to better integrate the management of CHAMPUS and the MTFs. The stated goals of CRI were to improve access to and quality of health care while controlling cost growth. This is the only large-scale DOD managed care project for which cost, utilization and beneficiary satisfaction data are available and thus it will be analyzed in detail in this study.

During the period 1989 to 1991, DOD initiated Catchment Area Management (CAM) demonstrations at five sites. These demonstrations will be completed in late 1993. In CAM, local military commanders are responsible for managing all military and civilian care provided to an enrolled population residing in their catchment area⁴. Cost control is obtained by negotiating discounts with and hiring civilian providers to increase MTF use. Preliminary results show that CAM has had mixed success in lowering costs. Of note, is that total demand for outpatient care has increased under CAM. [Ref. 5: p. 19]

In 1992, the Army began the Gateway To Care (GTC) Program at 13 sites. In GTC, the local military commander is responsible for managing all military and civilian care provided to beneficiaries residing in their catchment area.

⁴A catchment area is defined as that area within a 40-mile radius of the MTF.

This program uses a modified form of capitated budgeting based on the total number of eligible beneficiaries residing in the area. As in CAM, early results show mixed success with the program. [Ref. 5:p. 19]

Also in 1992, DOD began the Coordinated Care (CCP) and TRICARE programs, which like CAM and GTC, attempt to integrate military and civilian care with the features of a managed care network.

In October 1993, DOD will begin the Uniformed Services Family Health Plan in 10 sites, an HMO-style plan⁵ in which enrollees receive their total care from the HMO and are prohibited from using the MTF or CHAMPUS [Ref. 9:p. 20].

In July 1993, the Defense Health Agency (DHA) approved a tri-service, region-based lead agent concept for managing and integrating a networked health care delivery system [Ref. 10].

Except for the CRI program, it is still too early to evaluate the results and benefits of these other initiatives.

E. THE CRI DEMONSTRATION PROJECT

The CRI is a good candidate for studying the effects of incentives on health care demand and utilization of services within DOD, since it is DOD's oldest managed care model.

⁵A Health Maintenance Organization (HMO) is a prepaid health plan that provides a range of health services in return for fixed premiums.

Also, comparative demonstration and control site cost and performance data are available for this program.

CRI is a contractor-managed health care delivery program in which eligible MHSS beneficiaries are offered a choice of three programs: an HMO option, a PPO⁶ option, and standard CHAMPUS (indemnity fee-for-service option). The three options provide the same basic benefit structure, with the HMO option providing additional preventive care services. Cost-sharing provisions also vary between the three options. Therefore, these differences represent the varying incentive structures of the CRI program.

As directed by Congress, an independent evaluation of the CRI project was performed. The evaluation was conducted by the RAND Corporation, which compared CRI utilization, costs and beneficiary satisfaction in 11 matched CRI and non-CRI areas. The data were collected for the six-month period preceding CRI (February - July 1988) and then for a subsequent six-month period following CRI implementation (May - October 1990).

This study analyzes and compares the utilization data from the two six-month periods with the program incentive structures, in order to draw conclusions regarding the influence of incentives upon beneficiary demand behavior.

⁶In a Preferred Provider Organization (PPO), medical care providers such as doctors and hospitals, either individually or in groups, agree to provide an insurance plan or employer with discounts on their services.

F. RATIONALE FOR AND EXPECTED BENEFITS OF THE STUDY

This study is expected to result in a greater understanding of the role of financial incentives in influencing beneficiary demand behavior and thus overall utilization of health services. Since demand behavior is integral to cost containment, access and utilization of care, the demand behavior patterns gleaned from this study will be useful:

1. As DOD considers various health care reform proposals.
2. In the evaluation of other currently ongoing DOD-operated managed care initiatives (e.g., CAM, GTC, CCP).
3. In evaluating the effectiveness of existing incentive structures in the CHAMPUS and CRI programs.
4. In enhancing coordination between the contractor and DOD for risk-shared programs (e.g., CRI) in which beneficiary demand may freely occur in either system.
5. In evaluating potential contractors of alternative health care delivery and network programs from the standpoint of managed demand experience.
6. In decisions regarding mandatory enrollment and capitation budgeting in managed care systems.
7. In designing incentive-based systems for use within MTFs.

G. CONDUCT OF THE STUDY

The approach used in this study will be an evaluation of existing CRI health care utilization data in terms of the financial incentive-based models of demand behavior as described in the literature. The CRI demand patterns will

also be analyzed in comparison to demand behavior results from other managed care programs employing similar incentives.

Chapter II of this thesis will discuss the role of incentives in competition-based models of health care reform. It will also describe the effects of financial incentives on demand behavior, and the impact of financial incentives on demand as reported in several studies.

Chapter III will describe the CRI demonstration project, benefit structures (incentives), data source methodology and results.

Chapter IV will discuss the findings regarding the influence of financial incentives on demand for care in the CRI project. The findings will be discussed in terms of overall demand for care and beneficiary satisfaction. The potential use of incentives in DOD health care reform will also be discussed.

Finally, the conclusions and recommendations will be presented in Chapter V.

CHAPTER II. BACKGROUND

A. THE INCENTIVES-BASED APPROACH TO HEALTH CARE REFORM

1. Market Flaws and Directions for Health Care Reform

The U.S. health care market fails to operate in an economically efficient manner for many reasons, including informational asymmetry, product complexity, and concerns about equity [Ref. 11:p. 13]. These distortions are intensified by the blurred distinction between consumer and supplier in the market place, where the consumer may be a patient, provider, employer or insurer.

The most salient difference however, between the health care market and other markets is that health care is widely viewed as a right of all individuals, not as a service to be economically rationed by the ability to pay. As a result, moral and ethical dilemmas abound. Insurance rating policies which practice adverse selection have increased the number of uninsured persons, and are often viewed as morally repugnant. Adverse selection refers to the process whereby individuals with existing or newly diagnosed illnesses are excluded from coverage.

Medical ethicists worry that the fiduciary relationship between doctors and patients will be replaced by an economic one in which physician gatekeepers respond

primarily to financial incentives [Ref. 12:p. 629]. Hence, the quality and adequacy of health care services delivered, especially to the poor and persons with marginal health plans, would be questioned. Explicit attempts to ration health care, such as that initiated by the Oregon state legislature for Medicaid patients, are met with strong opposition.

In recognition of these concerns, health care reform proposals have taken on two distinct approaches. One approach emphasizes the need for regulatory controls on providers and hospitals, as exemplified by the single-payer, Canadian-style national health care system proposals. The other approach as exemplified by the Jackson Hole plan [Ref. 13:p. 15] focuses on economic incentives to reduce wasteful spending, and emphasizes managed care delivery systems and consumer-choice to encourage competition. Both approaches differ in their concept of the health care market, whether it is a failed market in need of substantial regulation, or whether it is an ailing market that can be improved through competition.

As evidenced by rapidly rising health care costs, regulatory actions of the past (e.g., prospective payment systems for Medicare and Certificate of Need programs to control capital expansions) have failed to contain cost growth. This is so because these changes did not address the root problem -- an adverse incentive structure which encourages excessive utilization and cost growth and interferes with market competition. Also, experiences with

national health care systems in other industrialized countries show that government price and budget controls fail to restrain demand and utilization, and commonly result in explicit rationing of health care services [Ref. 14:pp. 12-17].

Over the past decade, experiences in this country with managed care have shown that while it is capable of reducing health care costs substantially, managed care, operating alone in a system based on adverse incentives, will not contain the rise in health care expenditures [Ref. 15:p. 27].

Therefore, the most effective health reform proposals are likely to be those that comprehensively attempt to correct the flaws and perverse incentives in the market place, and emphasize enhanced consumer involvement in the demand and utilization of health resources.

2. The Role of Incentives

Many of the reasons cited for soaring health care costs: 1) expanded use of high-cost medical technologies, 2) third-party payment systems, 3) cost-shifting due to uncompensated care, 4) increased utilization of services, 5) insufficient emphasis on preventive care and 6) lack of individual responsibility and purchasing power, are essentially the result of perverse economic incentives.

Our medical culture reinforces use of the most advanced technology, high patient expectations and recourse

through litigation if these expectations are not met [Ref. 16:p. 2532]. An "arms-race" phenomena exists in medicine, in which providers compete on the basis of quantity and quality of services, rather than on medical outcomes and cost [Ref. 17:p. 22]. Our health care system is not organized to improve health outcomes, but rather to attract providers and enable them to practice their specialty [Ref. 16:p. 2533]. Fee-for-service insurance plans reimburse providers for delivering more care, regardless of the necessity or limited health benefits to be gained. Finally, consumers are shielded from the true costs of health care by third-party payers, tax subsidies for employer-provided health coverage and lack of information regarding the costs, alternatives to and effectiveness of medical treatments. They therefore have exceedingly high expectations of the health care system and make "cost-unconscious" decisions.

Within the MHSS, health care has traditionally been incrementally budgeted on the basis of level of resources consumed and quantity of services delivered. Quantity of services is used as a surrogate measure for quality of care and access, rather than health outcome. As a result, providers are incentivized to overutilize resources.

Patients also face incentives to overconsume as free outpatient care is offered within the MTF, and limited cost sharing is required for inpatient care and CHAMPUS use.

Not surprisingly, statistics show that non-active duty military beneficiaries have higher than average utilization rates for health care services as compared to the overall population. When comparing days of hospital care per 1000 persons under the age of 65, these beneficiaries used 720 days as compared to 535 days for the general population, a rate approximately one-third higher [Ref. 5:p. 13]. In terms of outpatient care, active duty dependents average seven visits per year as compared to an average rate of five per year for the civilian population [Ref. 18:p. 16]. It has also been estimated that retirees and their dependents initiate 2.2 times as many visits in the MTF than in CHAMPUS due to the availability of free care [Ref. 19:p. 12].

B. HEALTH CARE DEMAND AND MORAL HAZARD

1. The Derivation of Health Care Demand

Most Americans have excessively high expectations regarding the range of benefits and technological advances that the U.S. health care system should provide. These expectations are often translated into consumer demand.

In the health care system there are important distinctions between need, demand and utilization of health care services. Need generally refers to the level of care required to treat a medical condition. The concept of "need" though, can be extremely variable, driven by medical, ethical, social and political concerns [Ref. 20:p. 2]. Demand is often

generated by patient expectations. Utilization, however, represents the actual amount of health care services delivered, and is affected by patient demand, physician practice patterns and community standards for medical care.

Factors which influence our demand for care include changing public attitudes as to the value of medical care and the acute care delivery model, the increasing dominance of chronic conditions, and the impact of rising education levels on the desire to more fully participate in medical care decisions. As these demand factors become more prevalent, the misfit between our existing health care financing and delivery system which emphasizes technology-oriented, specialty-based acute care, and the public desire for more primary, home-based and long-term care services becomes more pronounced [Ref. 21: p. 396].

Demand for health care, as described in the economics literature, is often referred to as being "derived" from a health production function, in which individuals maximize their well being subject to income and other constraints [Ref. 22: p.382].

The economic model of household production of health [Ref. 23:p. 24] is useful in studying demand behavior patterns, since it combines the effects of a behavior with the economic and behavioral determinants of why and how individuals engage in these behaviors. This type of

multidisciplinary approach is needed as a result of the complexity of determinants affecting health care demand.

2. Moral Hazard

Moral hazard refers to "the tendency of people with insurance to change their behavior in a way that leads to larger claims against the insurance company." [Ref. 24:p. 167] It is essentially an issue of economic efficiency, in which insured persons seek more care and then increasing levels of insurance, thus driving the cyclical nature of medical cost inflation [Ref. 25:p. 8]. In the context of health care, moral hazard encompasses both health risk and financial risk.

In terms of health risk, moral hazard exists to the extent to which an individual's behaviors or lifestyle adversely affects their health status. Although health risk is impacted by genetics and many environmental factors such as housing, education, crime, drugs, and poverty, some personal behaviors can be modified to improve health status and life expectancy. The U.S. Center for Disease Control estimates that 53% of premature deaths in this country are attributable to lifestyle habits such as smoking, drug and alcohol abuse, poor diet, lack of exercise and failure to use seatbelts [Ref. 26:p. 29]. In a study of 1991 Medicaid expenditures, it was determined that 20% of Medicaid expenses were used in the treatment of tobacco, drug and alcohol related conditions [Ref. 27:p. A2]. In addition to the personal costs and costs

to insurers, the increased costs to society of behaviors such as smoking, drinking and lack of exercise are well documented [Ref. 28:p. 5].

Moral hazard also exists in the form of financial risk, that is, the extent to which individuals overutilize health care services since they do not fully bear the costs of their extra health consumption. In simple economic terms, their marginal cost is less than their marginal benefit of receiving the extra services.

Incentive models suggest that individuals use the expected utility theory to evaluate the costs and benefits of altering their behavior [Ref. 29:p. 120]. Therefore, health plan incentive structures which integrate financial and health promotion and wellness incentives should be the most effective in altering demand and utilization behavior.

C. USE OF FINANCIAL INCENTIVES TO INFLUENCE DEMAND

There are several interrelated financial incentive strategies that may be used to influence demand.

1. Cost Sharing

Cost sharing strategies involve the use of deductibles, coinsurance (copayments) and benefit structures (covered services) as financial incentives to alter demand behavior. As insurers struggle with health care cost escalation, cost sharing is becoming a more common feature of U.S. health plans. Cost sharing deductibles of \$100 to \$500

per person and 20% coinsurance rates are typical in the insurance industry [Ref. 30:p. 155].

Several studies, that will be described below, have demonstrated that cost sharing incentives strongly affect demand for health care services. This effect is somewhat mitigated however, by the increasing use of supplemental insurance coverage. A U.S. Department of Health and Human Services (HHS) survey revealed that 80% of Medicare beneficiaries were reinsured against cost sharing by supplemental policies [Ref. 31:p. 5].

Cost sharing is likely to make the market more competitive, since consumers who bear more costs are more sensitive to price differences among providers. This phenomenon has been witnessed in the price competition among suppliers of optical services, for which consumers have had to bear some or all of the costs of these services.

An important consideration in the use of cost sharing as an incentive to control demand is the impact of delay or deferment of treatment upon health status and the costs incurred in treating more serious conditions. As will be discussed below in the review of studies on the impact of financial incentives on demand, this effect has not been encountered to any significant extent.

2. Choice of Economical Health Plans

A related financial incentive strategy designed to reduce excess utilization and cost and encourage market competition, is to provide incentives for consumers to choose among competing low-cost individual providers or economical managed care health plans. Consumer shopping would intensify price competition among providers and plans [Ref. 32:p. 35]. This strategy presupposes, however, that beneficiaries are informed of the costs and quality of health plan alternatives and can choose freely among competing alternatives. Further, the beneficiaries themselves bear the increased costs of selecting "high-option" plans or reap the benefits of selecting lower cost plans. A version of health plan choice exists in the CRI model, in which eligible beneficiaries can choose among HMO and PPO-type options and standard CHAMPUS (fee-for-service).

For this economical choice strategy to be effective, the consumer would need price and performance data on health care providers and plans in order to make a rational choice, including such data as resource use, health outcomes and patient satisfaction [Ref. 33:p. 113]. As studies described below will show, enhanced economic incentives, such as greater benefits, may be necessary for the consumer to choose lower-priced plans which limit provider choice.

Also, given the current tax treatment of health plan premiums, a consumers' incentive to select economical

providers or plans may be limited. Changes to the tax treatment of health benefits would provide added financial incentive to consumers to make cost-conscious choices.

3. Tax Treatment of Health Benefits

The tax exclusion for employer-provided health care plans is "one of the most regressive and inflationary incentives in the current health system" [Ref. 33:p. 114]. This open-ended federal tax subsidy is regressive since it provides greater benefit to high income taxpayers as a result of their higher marginal tax rates.

The employer exclusion also provides one of the largest tax preferences to employers since contributions are deductible business expenses for income tax purposes and are exempt from payroll taxes. The CBO has estimated that this tax subsidy to employees and employers will cost the federal government \$46 Billion in lost revenue in Fiscal Year 1993 [Ref. 5:p. 32].

The tax treatment of health care plans is inflationary, since it incentivizes the purchase of more comprehensive policies. As discussed in the section on moral hazard, increasingly insured persons tend to seek more care. This fuels medical cost inflation. The tax subsidy of health care plans also has an adverse impact upon job mobility, since a change of jobs often results in loss of group coverage and

potential problems with waiting periods and preexisting condition clauses in new health plans [Ref. 34: p. 2541].

In the past, legislative bills to limit health care tax preferences have suggested imposing limits on the tax-free premium that employers could contribute to a health plan and requiring employers to offer a range of options [Ref. 6:p. 427]. Other bills have simply suggested repealing the exclusion for employer-provided health insurance premiums [Ref. 35:p. 63].

These suggestions are consistent with the competitive market incentives-based approach which encourages consumer awareness of cost, choice and responsibility.

4. Integration of Cost Sharing, Choice and Tax Changes

Although the financial incentive strategies discussed above were presented separately, they are all integrated in the competitive market approach to health care reform. In this approach the consumer is responsible and accountable for their health care choices, and acts in a cost-conscious manner. Incentive structures thereby promote this cost-conscious behavior, and thus cost-conscious demand.

A major concern with financial incentive structures is that they be designed to restrain excess demand, not impose financial deterrents to needed health care services. This is necessary to ensure that low-income and high-need users are

adequately served and to prevent future costly episodes of care.

D. STUDIES ON THE EFFECTS OF INCENTIVES ON DEMAND BEHAVIOR

1. The Health Insurance Experiment

In the Health Insurance Experiment (HIE) conducted by the Rand Corporation from 1974 to 1979, 2,760 families were randomly enrolled in 14 insurance plans with varying levels of deductibles and copayments. The HIE examined episodes of treatment, versus total costs, so that utilization of services could be more reliably measured. The results indicated that both coinsurance and deductibles had strong effects in reducing the number of episodes of care, but the cost per episode was reduced only slightly. Copayments, fees collected at the point of service, however, has the greatest effect on utilization.

As compared with families who had a 25% cost share, families in the free care plan used 25% more outpatient care and had a 25% higher probability of hospital admissions. Compared to those with cost sharing, recipients of free care used emergency department services 90% more often for non-urgent diagnoses such as lacerations [Ref. 18:p. 91].

Using a simulation model to predict the effect of deductibles upon demand, it was determined that deductibles in the range of \$50 to \$500 would be very effective in restraining mostly outpatient demand, but larger deductibles

exceeding \$1000 would have little effect on reducing excess utilization [Ref. 36:p. 60].

In the HIE, patients were less likely to defer acute, chronic and hospital episodes than dental and well-care episodes, and the demand effects of the various cost sharing provisions did not have an adverse effect on health status. Nonetheless, the concern of delayed treatment and subsequent increased health care costs could be applicable to low income consumers who might defer preventive and well-care services.

2. The UMW Study

The United Mine Workers (UMW) study was a natural experiment for which the effects of cost sharing on both consumer and provider behavior were analyzed. In 1977, UMW labor agreements resulted in the abandonment of free health care and adoption of cost sharing provisions which included a 40% coinsurance rate and a \$250 deductible.

Immediately following the implementation of cost sharing, demand for physician visits decreased by 36%. The Russelton Medical Group, which served the UMW, was severely affected by the reduced demand and attempted to compensate for this reduction by increasing the number of physician-initiated visits, a phenomenon referred to as "churning" [Ref. 37:p. 89].

3. Other Cost Sharing Studies

In addition to the HIE, other studies in the literature also support the effect of cost sharing on demand. In a natural experiment conducted at Stanford University in 1973, when patients were changed from full coverage to 25% coinsurance, physician visits were reduced by 24%. Likewise, in a Newhouse and Phelps econometric study based on household surveys, hospital spending was reduced by 17% when coinsurance was changed from 0 to 25% [Ref. 38:p. 13].

Studies in the HMO environment also show that even modest copayments reduce demand. Cherkin et. al. noted that an introduction of a \$5 per visit copayment resulted in an 11% and 3.3% decrease in primary care and specialty-care visits, respectively [Ref. 37:p. 87]. The copayments had a much greater effect on high users, and no decline in health status was detected.

4. Health Plan Choice

In a study on health plan choice, Medicare beneficiaries were surveyed and offered choices among traditional fee-for-service Medicare and several fictitious alternative health plans (AHP). The plans varied according to benefits provided (e.g., catastrophic coverage, long-term care and pharmacy), cost and provider choice. The survey research was then used to establish a regression model for AHP plan choice.

The results were evaluated in terms of an expected utility approach, and showed that demand was more responsive to price changes than expected value of benefits [Ref. 39:p. 26]. Further, as provider choice became more limited, respondents were less likely to enroll in an AHP unless offered substantial financial incentives.

5. Family Use Demand Patterns in DOD

In 1984, DOD conducted a mail survey of military beneficiaries for the purpose of garnering general opinions about health care, family use and cost of care, and satisfaction with care received. Data from the survey was subsequently used to statistically model the probability of a family choosing one of the following categories of outpatient use: military-reliant, military-preference, civilian-reliant, or civilian-preference.

Results of the model suggested that families would alter their patterns of care in response to changes in the cost or availability of care [Ref. 18:p. 103]. Military families weighed two costs in selecting their source of care, the "time" or convenience cost of medical care and the out-of-pocket cost of care. As expected, the closer a family lived to a military treatment facility, the more likely they were to be classified as military-reliant. Also, as income level increased, the expected likelihood of civilian-reliant or civilian-preference for care increased. In this model though,

the "time" cost of care was only related to distance, and did not include time spent waiting for service delivery.

6. Non-Monetary Factors in Health Care Demand

In a Rand study of public sector outpatient department use, the "time" cost of travel was found to be an important determinant in the demand for medical services when free care was available [Ref. 40:p. 14]. The results showed that estimated distance-elasticities approached or equaled the effect of monetary price-elasticities on demand. They also showed that the provision of free service could inadvertently be shifted in favor of persons with a low opportunity cost of time. This latter result raised the issue of using income subsidies as a tool to redistribute the relative proportions of care sought in the public and private sectors.

E. SUMMARY

This chapter has described the role of economic incentives in shaping the behavior of health care consumers. When consumers are shielded from the true costs of health care by third-party insurance payers and tax subsidies for employer-provided health coverage, they do not make cost-conscious decisions regarding health care consumption, and contribute to rising health care costs. Lack of information regarding the costs, alternatives to and effectiveness of medical treatments also contributes to uneconomic choices.

The phenomenon of moral hazard, which refers to the tendency of persons with insurance to change their behavior in ways leading to larger insurance claims, was discussed in terms of both health risk and financial risk. In terms of health risk, moral hazard exists to the extent to which an individuals behaviors or lifestyle adversely affects their health status. In terms of financial risk, moral hazard exists to the extent individuals overutilize health care services since they do not fully bear the costs of their extra health consumption.

Financial incentive strategies to influence demand are thus aimed at making consumers more aware of the costs of their lifestyle and health care choices. These strategies are interrelated and include cost sharing, choice among economic health plans, and modification of the tax treatment of health benefits.

Several studies citing the effects of these incentives on demand behavior were presented to illustrate the behavioral changes that occur when consumers more directly bear the cost and consequences of their health care choices.

CHAPTER III. METHODOLOGY AND FINDINGS

A. METHODOLOGY

1. The CRI Demonstration Project

The CHAMPUS Reform Initiative (CRI) was implemented in August 1988 as a five-year managed care demonstration project to control costs and improve access to and quality of care provided to beneficiaries.

In the CRI project, beneficiaries were offered a choice of three health care plan options:

1. Standard CHAMPUS, a fee-for-service reimbursement program in which beneficiaries could seek care from a network of providers participating in the CHAMPUS program.
2. CHAMPUS Prime, an HMO-type option in which enrolled beneficiaries had reduced cost sharing and greater preventive care coverage in exchange for their sole participation in Prime.
3. CHAMPUS Extra, a PPO-type option in which beneficiaries had reduced cost sharing if they used the optional PPO network.

Appendix A lists the cost sharing and benefit provisions of each of these options.

CRI was implemented as a contractor-operated program, in which the contractor shared the financial risk with the government of providing health care services to CHAMPUS eligible beneficiaries. The CRI model is considered "risk-

shared", since the contractor did not fully assume the financial risk for providing all defined health care benefit services to the eligible population. Although the contractor carried the combined risk for both the open-ended fee-for-service and managed care options, they were reimbursed by DOD for this increased risk subject to certain limits on losses and profit. The contractor and government also shared the risk, in that beneficiaries within the CRI project area were able to use both CRI and MTF services.

2. The Rand Evaluation

An independent evaluation of CRI was conducted by the Rand Corporation to assess whether CRI achieved its goals and to estimate the effects of CRI on utilization of services, costs and beneficiary satisfaction.

The Rand evaluation essentially consisted of three parts. The first of these focused on the relative change in health care use by a sample of beneficiaries, since relatively complete and accurate data could be derived for a sample population. From this data, health care utilization and costs "with CRI" and "without CRI" were estimated for the CRI demonstration area. These estimates were based on data from the demonstration and control sites, adjusted for preexisting cost and utilization differences and differences in the populations served.

The second part of the Rand evaluation focused on differences in aggregate health care use by all beneficiaries within the CRI areas, to determine the effectiveness of CRI's utilization review procedures. This approach, while useful in measuring total CHAMPUS use, has limited utility in comparative studies of health care demand, since an accurate count of eligible beneficiaries does not exist and differences in beneficiary health status and other characteristics can not be adjusted for [Ref. 41:p. 2].

The third part of the evaluation, derived from a survey of beneficiary attitudes, focused on access to and satisfaction with health care services within both the CRI and control areas.

Data for the Rand evaluation were obtained from several sources: beneficiary surveys, MTF utilization and cost data, and CHAMPUS claims. Cost measures included CHAMPUS costs, MTF costs and total government costs for inpatient and outpatient services. Utilization measures included the number of outpatient visits and hospital days in CHAMPUS and the MTFs [Ref. 41:p. 2].

The data was gathered from 11 matched CRI and control sites during a baseline and follow-up period. The baseline period, February through July 1988, immediately preceded the implementation of CRI. The follow-up period occurred approximately two years later, from May through October 1990.

Once the raw data for the final sample population was collected and adjustments were made for health status and other differences, regression analyses were performed to estimate the effects of CRI on utilization, costs and beneficiary satisfaction within the entire CRI area. The analyses also enabled estimation of what utilization, costs and satisfaction would have been in California and Hawaii without the CRI demonstration project.

A complete description of the selection of control and demonstration sites, sample frame, survey questions and regression techniques is presented by Hosek [Ref. 41] and Sloss [Ref. 42].

3. Study Methodology

a. Assumptions

This study utilizes the results of the Rand evaluation in order to examine the effect of incentives upon beneficiary demand behavior. The following assumptions, described below, were incorporated in the study:

- Outpatient utilization is used as the measure of demand.
- The incentive structure is represented by the cost sharing and benefit provisions of the three CHAMPUS options.

Health care utilization is a function of many factors, including health status, technology, medical practice patterns, effectiveness of utilization review, and demand. While inpatient utilization is primarily provider-driven and

subject to the extent of utilization review, outpatient utilization is largely patient-initiated. Further, by comparing utilization patterns of the same individuals over time, the effect of health status factors is held constant.

Since the MTFs do not maintain automated information on individual outpatient visits, this portion of the outpatient utilization data was obtained by survey. Although self-reported health care utilization data may be subject to bias (e.g., older persons, heavier users of health care and healthy individuals tend to underreport) previous studies have noted that, on average, the reported number of visits closely approximates the actual number of visits [Ref. 41:p. 18].

Many studies of demand behavior, such as those described in Chapter II, frequently cite outpatient utilization as a measure of demand. Therefore, outpatient utilization, in the absence of a more universally recognized surrogate, is used to measure demand.

The second assumption concerns the incentive structure inherent within the CRI options. Factors which influence demand for care include cost sharing provisions, covered benefits or services, and "time" cost considerations such as proximity and access to care. The benefit structures of the three CRI options, as listed in Appendix A, encompass these factors and thus represent the incentives which impact patient-initiated demand.

b. Evaluation Factors

In the CRI project, the Prime option offered the incentives of reduced cost sharing and increased preventive care benefits in exchange for mandatory enrollment in an HMO-type health care delivery program. Once enrolled in Prime, beneficiaries could not seek care through the other CRI options. All beneficiaries not enrolled in Prime, however, were free to use the Extra or standard CHAMPUS options at their discretion. Thus, for evaluation purposes, beneficiaries using the Extra or standard CHAMPUS options essentially form one group (Non-Prime), since the extent of incentives employed and differences in use of services between these groups can not be distinguished. Therefore, comparisons in this study are made between two CRI groups: Prime and Non-Prime users.

The principal factor employed in this study to evaluate the impact of incentives upon beneficiary demand behavior is utilization of outpatient services. Demand patterns, as evidenced by outpatient utilization rates, are thus used to measure the effectiveness of the incentives employed. The degree to which the incentives were implemented is evaluated in terms of cost sharing changes and utilization of the additional preventive health care benefits provided under the Prime option. Beneficiary opinions regarding access

to and satisfaction with care are also evaluated in order to assess the impact of incentives upon the "time" cost of care.

Specifically, the following comparisons are made:

- Outpatient utilization rates for Prime and Non-Prime beneficiaries within the CRI area and estimates of outpatient utilization in this same area had CRI not been implemented.
- Utilization of preventive care services for Prime, Non-Prime and Control area beneficiaries.
- Average out-of-pocket costs in the CRI and Control areas during the two study periods.
- Waiting times, travel times, satisfaction with out-of-pocket costs, and satisfaction with access to care for Prime, Non-Prime and Control area beneficiaries.

B. FINDINGS

The following tables present findings on the effects of CRI on outpatient utilization rates, patient cost shares, and access and satisfaction measures. The values represented are predictions for the population as a whole derived from regression analyses performed on the sample data. Due to sample size limitations, separate comparisons for children could not be made. Therefore, comparisons are made for the adult population only.

1. Outpatient Utilization Rates

As indicated in Table 1, civilian health care utilization rates for adults participating in the Prime program were significantly higher than those for Non-Prime beneficiaries. This finding is not surprising since the lower

cost sharing provisions of the Prime program were likely to result in an increased demand for care. Of interest, is that even though Prime beneficiaries had higher utilization rates of civilian care, their use of military health care was approximately the same as that for Non-Prime users.

The findings also suggest that there was little difference between the civilian health care utilization rates of Non-Prime beneficiaries and utilization rates expected for these same beneficiaries had CRI not been implemented, the "Without CRI" estimates.

There was also some difference, though not statistically significant at the .10 probability level, in the utilization of military health care between the Non-Prime and "Without CRI" groups. This difference is probably attributable to the improved access to MTFs which may have partly resulted from the resource sharing and CHAMPUS-MTF coordination provisions of CRI.

Table 1
Outpatient Utilization Rates in CRI

Source of Care (Adults)	Prime	Non-Prime	Without CRI
Civilian visits per beneficiary	2.12*	0.90	0.90
Percentage with visits	42%*	21%	22%
Visits per user	4.82**	3.93	3.80
Military visits per beneficiary	2.02	2.01	1.86
Percentage with visits	49%	50%	48%
Visits per user	3.88	3.76	3.54

Notes: * Difference statistically significant at the .01 probability level. ** Difference statistically significant at the .05 probability level. The "Without CRI" estimates represent utilization rates for the CRI demonstration population under the assumption that CRI was not implemented.

Source: Hosek, S.D. and others, *Evaluation of the CHAMPUS Reform Initiative; Health Care Utilization and Costs*, Vol. 3, Rand Corporation, 1993, p.24.

2. Utilization of Preventive Care Services

Table 2 reflects differences in the utilization of preventive care services for Prime, Non-Prime and Control beneficiaries. Beneficiaries responded in the follow-up period (May - October 1990) whether they had received these services in the past year. Differences between actual use and use based upon predicted utilization values from regression techniques were then statistically compared between the Prime and Control groups, and the Non-Prime and Control groups.

As shown in Table 2, a greater proportion of Prime enrollees received preventive care services than Non-Prime and Control beneficiaries. In fact, all differences between Prime

and Control beneficiaries were statistically significant at the .10 probability level or less.

Since increased preventive services was one of the incentives for beneficiaries to enroll in Prime, and the cost of these services was covered for Prime but not the Non-Prime and Control beneficiaries, it is not surprising that Prime enrollees had greater access to and use of these services.

The differences, however, between Non-Prime and Control beneficiaries for each of these services was not statistically significant at the .10 level. This could indicate that Prime members increased use of these services was primarily related to CRI incentives rather than health promotion efforts.

Table 2
Percentage of Beneficiaries Receiving
Preventive Care Services in the Past Year
CRI and Control Area Beneficiaries

Preventive Care Measure	Prime	Non-Prime	Control
Blood Pressure Check	91.3*	85.4	85.0
Rectal Exam (Age > 40)	55.2**	46.4	47.2
Pap Smear (Women Age > 18)	74.5**	67.4	68.0
Breast Exam (Women Age > 18)	76.5*	67.8	68.3
Mammogram (Women Age 35-49)	78.3***	72.5	70.9
Mammogram (Women Age > 50)	68.3**	57.4	54.2

Notes: * Difference statistically significant at the *.01 probability level. ** Difference statistically significant at the .05 probability level. *** Difference statistically significant at the .10 probability level.

Source: Sloss, E.M. and Hosek, S.D., *Evaluation of the CHAMPUS Reform Initiative, Beneficiary Access and Satisfaction*, Vol. 2, Rand Corporation, 1993, p.27.

3. Cost Sharing Changes

Table 3 shows the changes in the average annual costs paid by beneficiaries. As expected, the reduced cost sharing provisions of CRI lowered out-of-pocket costs for both Prime and Non-Prime beneficiaries, but to a much greater extent for Prime participants.

The pre-demonstration costs were higher in California and Hawaii than in the Control areas because CHAMPUS allowable charges were higher. These higher costs were one of the

reasons that the California/Hawaii region was selected as a demonstration site for the CRI project.

During the post-demonstration period, the amounts paid by active duty spouses in the Non-Prime group were slightly lower (\$8.00) than those paid in the Control area. For retirees and spouses, Non-Prime beneficiaries had lower out-of-pocket costs than those in the Control area, presumably as a result of the increased access to MTF care afforded by CRI.

Out-of-pocket costs for active-duty spouses in the Control areas were also lower (\$14.50) in the post-demonstration than in the pre-demonstration period. Since health care costs did not decline between 1988 and 1990, this difference could be attributable to fee discounts and lower utilization levels experienced with CHAMPUS participating providers. It is also possible, that since the data was obtained from existing CHAMPUS claims records, that the claims records for active-duty spouses in the Control area in the post-demonstration period were not complete.

Table 3
Average Annual Out-of-Pocket Cost Per Beneficiary
CRI vs. Control Areas

Category	CRI DEMONSTRATION AREAS			CONTROL AREAS	
	Pre-demo	Post-demo		Pre-demo	Post-demo
		Prime	Non-Prime		
Active Duty Spouses	\$171.71	\$31.71	\$90.30	\$112.80	\$98.30
Retirees and Spouses	\$386.19	\$121.16	\$296.76	\$361.36	\$358.42

Notes: The Pre-demonstration period represents the baseline period, February - July 1988. The Post-demonstration period represents the follow-up period, May - October 1990. Tests of statistical differences were not performed.

Source: Hosek, S.D. and others, *Evaluation of the CHAMPUS Reform Initiative; Health Care Utilization and Costs*, Vol. 3, Rand Corporation, 1993, p.35.

4. Access and Satisfaction Measures

Table 4 reflects beneficiary opinions regarding their satisfaction with costs, quality and access to civilian care under the CHAMPUS and CRI programs.

Statistically significant differences exist between Prime and Control group members primarily in the area of out-of-pocket costs, suggesting that cost sharing was the most influential incentive of the program. Differences in satisfaction with time cost features, such as travel time and office wait, between the Prime and Control groups were negative. This could indicate that network providers were

less conveniently located, or perhaps they had heavier workloads as a result of increased scheduling to counteract the effect of lower negotiated fees. It may also indicate an increased expectation on the part of the Prime beneficiary, who desired a decrease in "time" costs concomitant with that of out-of-pocket cost, or simply reflect the expectations of those beneficiaries utilizing civilian sources of care, rather than MTF, for the first time.

Prime program retirees and their spouses reported greater overall satisfaction with civilian care, specifically with access to care. Since the Prime option significantly lowered the financial barriers to access for these beneficiaries, it is not surprising that its users perceived greater satisfaction with and increased access to care.

Table 4
Access and Satisfaction Measures
Percentage of Beneficiaries Satisfied with Civilian Care
CRI vs. Control Area Beneficiaries

	Prime	Non-Prime	Control
Overall Satisfaction			
All aspects of care:			
Active Duty Spouses	69.4	67.0	66.6
Retirees and Spouses	70.3**	65.7	63.9
Cost:			
Active Duty Spouses	77.7*	60.5	56.6
Retirees and Spouses	81.2*	63.3	62.3
Access:			
Active Duty Spouses	69.1	66.5	66.6
Retirees and Spouses	75.3*	68.8	67.9
Encounter-Specific Satisfaction			
Travel Time	83.9	88.9	86.6
Office Wait	81.6	84.7	83.8
Out-of-Pocket Cost	95.2*	76.2	74.1
Quality of Care	90.5	89.4	86.8

Note: * Difference between the Prime and Control groups statistically significant at the .01 probability level.

** Difference between the Prime and Control groups statistically significant at the .05 probability level.

Source: Sloss, E.M. and Hosek, S.D., *Evaluation of the CHAMPUS Reform Initiative, Beneficiary Access and Satisfaction*, Vol. 2, Rand Corporation, 1993, pp. 32-34.

CHAPTER IV. DISCUSSION

A. BENEFICIARY INCENTIVES AND DEMAND EXPERIENCE IN CRI

The CRI demonstration project provided an extensive amount of information to evaluate the effect of incentives on the demand behavior of DOD beneficiaries. Incentives for the managed care option of the CRI program included: reduced cost sharing, added preventive services benefits, and elimination of claims filing. These incentives were designed to entice beneficiaries to enroll in the HMO-like Prime option. Prime also offered beneficiaries the opportunity to reduce their "time costs" through the choice of primary care providers, who potentially could have been more conveniently located than the MTFs.

The initial results of the CRI program indicate that these incentives encouraged beneficiaries to increase their demand for outpatient services. This finding is consistent with the literature which suggests that reduced cost sharing to individuals results in an increased demand for services. As expected, Prime participants also increased their use of preventive services, a finding consistent with studies of managed care delivery programs.

1. Reduced Cost Sharing and Increased Demand

The Prime option of the CRI program significantly reduced out-of-pocket costs for beneficiaries. Pre-demonstration out-of-pocket costs were \$171.71 for active duty spouses and \$386.19 for retirees and spouses. Post-demonstration out-of-pocket costs dropped to \$31.71 and \$121.16 for these same beneficiaries. This significant decrease largely reflects the low copayment of \$5 required for physician visits. As a result, Prime beneficiaries initiated more of these visits as measured by the increase in outpatient utilization.

During the six-month study period, Prime participants averaged 2.12 civilian outpatient visits per beneficiary as compared to 0.9 civilian outpatient visits per beneficiary for Non-Prime beneficiaries. While a portion of this increase could be attributed to the increased use of preventive services and improved utilization management in the managed care program (e.g., inpatient care was shifted to the outpatient setting), these factors do not completely account for the significant increase in outpatient utilization rates. Also, since the data were adjusted for differences in health status between the Prime and Non-Prime groups, it is assumed that the remaining difference not attributable to enhanced utilization management, the additional use of preventive services or increase in provider-driven utilization represents unnecessary demand. Unnecessary demand in this case is

defined as demand initiated by the "worried well" or demand for care that did not require physician services.

These findings suggest that the cost sharing provisions of the Prime option were not sufficiently high to restrain unnecessary demand by the beneficiaries. As the studies in Chapter II demonstrated, financial incentives play an important role in restraining excess or unnecessary demand. And, of all the financial incentives employed, copayments, or "nuisance fees" as they are sometimes called, provide the strongest financial incentive to control demand.

Therefore, changes in the CRI program incentive structure which increase the copayment could serve to restrain unnecessary demand, and thereby reduce costs to DOD.

2. Enhanced Benefit Structure

Another incentive employed in the Prime option of the CRI program was an enhanced benefit structure. As illustrated in Appendix A, the Prime option included additional benefits such as routine physical exams, pap smears and other similar preventive care services. As expected, Prime beneficiaries made statistically significant higher use of these services than Non-Prime or Control area beneficiaries. While this additional use likely contributed to the higher outpatient utilization rates for Prime beneficiaries and increased costs to DOD, this use should be perceived as a positive result of the program.

An underlying objective of many managed care programs is to promote health and enhance wellness. This is usually accomplished by including generous preventive care benefits and educational services in the benefit plan. While recognizing that short term costs are increased in this approach, it is assumed that long term financial benefits will be realized through cost avoidance of treating chronic and serious conditions.

While the data reflect an increase in the use of preventive health services, it is unknown whether this availability and use of services led to the adoption of healthier lifestyle behaviors and choices on the part of Prime participants. Studies in the literature, however, do suggest that the more aware a patient is of the relationship between their lifestyle choices and health status, the more likely they are to engage in healthy behaviors. So, if patients also responded to the incentive structure with changes in their lifestyle behaviors, DOD would realize future financial benefits as well.

Therefore, in spite of structural features of the DOD budget system which focus on current fiscal year spending and cost control, DOD should emphasize preventive care for both active and non-active duty beneficiaries. As long as the entitlement nature of the health care services for DOD beneficiaries continues, DOD will benefit from these long term savings. This is because beneficiaries now served by the MHSS

will also be our future beneficiaries. Also, as DOD transitions to a budgeting system based upon capitation financing, it will be easier to justify the expense of preventive services in the short term.

In summary, the increased use of preventive services by Prime beneficiaries should be viewed as a positive outcome of the program. These benefits should continue to be included in the program benefit structure.

3. Time Cost

The results of the CRI program indicated that Prime participants were actually less satisfied with travel time and office waits for civilian care than Non-Prime and Control area beneficiaries. This finding indicates that the "time cost" incentive was not internalized by beneficiaries, perhaps due to the location or insufficiency of the number of participating network providers. If, with the maturation of the contract, the location and number of participating providers were improved, it is assumed that the "time cost" incentive would be more influential and beneficiaries would demand even more care. This result would of course be to the detriment of government cost control efforts.

Another incentive impacting the "time cost" of care was the reduced paperwork feature, the elimination of claims filing, of the Prime option. Since specific data regarding satisfaction with this feature were not gathered, its impact

on demand can only be inferred. As studies in the literature suggest, incentives which reduce the "time cost" of care may serve to increase demand, albeit at a much lower extent than incentives addressing cost sharing. Therefore, it is assumed that the elimination of claims filing may have been an influential incentive in reducing the "time cost" to beneficiaries and may partially explain a portion of the increase in outpatient demand and utilization.

4. Evaluating the Demand Experience in CRI

An important question in evaluating the results of the CRI program, is whether the increased demand was anticipated by DOD and whether this was a desired result of the demonstration program. As stated in Chapter III, DOD's goals for the program were to control costs and improve access to and quality of care provided to beneficiaries. In terms of these goals, DOD had mixed success with the demonstration project. Perceptions of access, satisfaction and quality improved, while total costs to DOD increased above those in control areas.

Based on the experiences of other managed care programs, it was assumed that slight increases in demand for outpatient services would be more than offset by savings from increased use of the MTF's and intense utilization management of inpatient services. This did not occur. While significant cost decreases were noted for inpatient utilization, they were

not enough to offset large cost increases from unrestrained outpatient demand and the administrative costs of the program [Ref. 41:p. 45]. Therefore, it can be concluded that the marked increase in outpatient utilization was not an anticipated nor desired outcome of the demonstration project.

Several studies undertaken before the CRI began foreshadowed these potential problems [Ref. 18:p. 44], [Ref. 43:p. 13], and [Ref. 44:p. 29]. These studies reviewed the CRI program and benefit incentive structures and concluded that costs to DOD could rise as a result of increased utilization of outpatient services and the risk assumed by DOD in the implementation of a shared-risk contract.

Thus, there were flaws in the incentive structure of the original CRI model. Cost sharing provisions were not set at a level sufficient to restrain unnecessary demand. The model also did not require enrolled beneficiaries to obtain all their care through the Prime network, essentially allowing open access to the MTF's. This feature provided an incentive to beneficiaries to supplement their network health services with free or low cost MTF services, thereby severely limiting utilization management efforts. This shared-risk provision of the model exposed DOD to the added risk of increased costs, which could have been minimized with a fully at-risk, capitated contract.

The successor contract to continue the CRI demonstration program in California and Hawaii beyond February

1994 does not include changes regarding the availability of MTF services to Prime participants or risk sharing with the contractor. However, while it does maintain all the same cost sharing features in the initial option period of the contract, it does allow for adjustment by DOD of the copayment levels in future option periods.

Therefore, it is likely that the same patterns of increased demand and utilization will occur in the early period of the successor contract and that costs to DOD will again be higher than those in non-CRI areas. These cost increases are likely to be exacerbated by the higher enrollment rates of beneficiaries in the Prime option. In 1993, Prime enrollment had at least doubled since the 1990 study data was collected [Ref. 41:p. 37].

If copayments were increased in future option periods of the successor contract, to perhaps \$10 or \$15, it is likely that some unnecessary utilization would be restrained and costs to DOD would be reduced. The net effect on costs to DOD though, would probably still be an increase over non-CRI areas as a result of the open-ended availability of MTF services and the limitations inherent in a shared-risk contract.

B. MANAGING BENEFICIARY DEMAND BEHAVIOR THROUGH INCENTIVES

The CRI project provided both positive and negative results. On the positive side, access and satisfaction were significantly improved and utilization of preventive services

increased. Also, greater numbers of beneficiaries were encouraged to enroll in the managed care Prime option, which enabled DOD to better assess the health care needs and utilization patterns of this population. On the negative side, outpatient utilization and total program costs increased. These mixed findings thus lead to concerns regarding how to structure a health care delivery system so as to maintain high quality and satisfaction while restraining unnecessary demand and controlling costs.

This leads back to the central theme of this thesis, that health care delivery systems should be structured to include incentives to motivate patients to be more cost-conscious in their demand for health care services. Potential changes to the DOD health care delivery system should therefore address the following topics.

1. Cost Sharing Incentives

As stated earlier, cost sharing in the form of premiums, deductibles and copayments plays an important role in shaping demand behavior. Of these cost sharing mechanisms, copayments are the most powerful determinant of behavior. Within the current military health care system, cost sharing varies substantially depending on whether the care is delivered by the MTF or CHAMPUS, or within the scope of one of DOD's many demonstration projects.

In the MTF, outpatient services are delivered free of charge and inpatient services are provided free or for a minimal per diem rate depending on beneficiary category. These minimal cost sharing features have failed to restrain demand in the MTF as evidenced by utilization rates which far exceed those for the general civilian population.

Standard CHAMPUS operates as a traditional fee-for-service indemnity program, see Appendix A. After a small deductible has been satisfied, coinsurance rates of 20% or 25% apply depending on beneficiary category. Copayments at the time of service are not required, and beneficiaries do not pay a premium for the plan. As in other fee-for-service plans, utilization is largely guided by patient demand. And, as in the MTF, DOD has been unable to restrain demand to the detriment of cost control efforts.

Cost sharing provisions in DOD's demonstration projects vary substantially by type, location, enrollment requirements and ability to use MTF services. The CRI Prime option and the Uniformed Services Family Health Plan (USFHP) scheduled to begin in October 1993 provide substantially reduced cost sharing in exchange for mandatory enrollment and participation in a managed care network program. Cost sharing occurs primarily through copayments at the time of service. These plans differ in that USFHP enrollees will be prohibited from using non-emergent MTF services. The plans also differ in the amount of the physician services copayment required.

In the USFHP and California, Hawaii and New Orleans CRI Prime programs, the copayment is currently set at \$5 per visit. In the CRI Prime program in Texas and Louisiana, an enrollment fee and higher copayments of \$10 per physician visit are required [Ref. 5:p. 26].

In DOD's other demonstration projects, cost sharing to beneficiaries occurs in essentially the same form as for non-demonstration sites -- free or minimal cost for direct care services provided by the MTF or its network extensions, and deductibles and coinsurance rates for care delivered by the indirect system. Even though these other demonstrations have not yet been evaluated, early evidence indicates higher levels of demand and utilization and marginal success in cost control.

Therefore, the results of the California and Hawaii CRI experience and preliminary findings from DOD's other demonstration projects indicate that DOD could make greater use of cost sharing incentives to modify beneficiary demand behavior and control cost escalation. Consideration could be given to increasing copayments for care delivered outside the MTF, implementing copayments within the MTF for care provided to beneficiaries, and establishing health care premiums overall.

DOD should also consider imposing different levels of cost sharing to achieve its objectives of managing utilization, restraining demand and controlling costs. If

health insurance premiums were established, higher premiums should be charged for those plans, such as fee-for-service reimbursement, that generate higher costs to DOD. Levels of copayments could vary (e.g., free, \$5, \$10 or \$15) by the type of care to be delivered. For example, in order to encourage the use of preventive services, copayments for these services could be waived or reduced from the level charged for standard physician visits. These changes would create incentives for beneficiaries to seek care from sources that would lower their personal costs and the costs to DOD, especially in the long-term.

2. Choice Among Health Plans

In the present MHSS structure, beneficiaries may choose to receive their care from the MTF and its network extensions or from civilian providers operating under CHAMPUS. In many cases, decisions regarding the source of care are made irrespective of cost, since the beneficiaries themselves do not bear the full cost of their choices.

As discussed in Chapter II, most people use an expected utility approach in evaluating the options available to them. In the MHSS, patients make choices in a confusing system comprised of:

- Limited and variable MTF access for some beneficiary categories and services,
- Nonstandardized and undefined benefit structures within the MTF,

- Freedom to seek care from either the CHAMPUS system or the MTF and,
- Freedom to seek an unlimited quantity of CHAMPUS health care services, subject only to the CHAMPUS defined benefit and fee-for-service reimbursement structures.

To enable economical choice, beneficiaries should be given information regarding the costs and benefits of plan options and fully bear the costs and benefits of their choices. This presupposes that the MHSS has defined plan options and benefit structures and costs, and guarantees the availability of these benefits. As described above, the options should provide incentives for beneficiaries to select plans which enable DOD to better control costs, in both the short and long-term. Beneficiaries selecting "high option" plans, those plans that would increase costs to DOD, should bear the increased costs associated with their choice.

The objectives of the Coordinated Care Program, establishing a uniform benefit structure, similar cost sharing requirements within beneficiary category, and maximum choice, would enable beneficiaries to make informed, economical choices.

In a 1984 survey of beneficiaries, three out of four respondents stated that they would be willing to pay \$5 for each outpatient visit to an MTF in exchange for added CHAMPUS benefits. Also, 47% of married officers and 36% of married enlisted personnel expressed a willingness to join an HMO as

an alternative to CHAMPUS [Ref. 18:p. 34]. These results indicate that beneficiaries, when offered choices among competing alternatives, are willing to make tradeoffs between costs and benefits. Results from the CRI Prime option also demonstrated that beneficiaries were willing to participate in a managed care program in exchange for lower cost sharing and increased preventive care benefits. The results from the 1992 DOD Health Care Survey will provide an updated perspective on current beneficiary attitudes concerning costs and benefits of health care services.

In a 1984 study of the feasibility of implementing a Health Enrollment System (HES) for the MHSS, researchers concluded that with a managed care enrollment program, DOD's costs could substantially be reduced without adverse effects on the health status of individuals involved [Ref. 45:p. 8]. However, the authors also concluded that significant changes in the organizational structure, resource management controls and data management systems would have to be made before an HES could be effectively implemented.

The HES model achieved cost control through the use of utilization management and beneficiary copayments. In order to offset the financial consequences of copayments, the authors suggested implementation of a health allowance and catastrophic protection for enrollees [Ref. 45:p. 53].

The health allowance would be similar to current allowances for housing and subsistence. Housing and

subsistence allowances are now provided to active duty members to offset these costs which may vary by location and which are not considered to be part of the basic compensation package. The health allowance, would thus compensate beneficiaries for incurring additional costs for health care services, while retaining the effectiveness of the copayment incentives.

3. Individual Responsibility and Involvement

In both sections above, individual responsibility and involvement in health care decision making are emphasized. DOD's comprehensive restructuring of the health care system must therefore include incentives for beneficiaries to make efficient choices to enhance DOD's cost control efforts. Further, the revised structure should be designed to aid beneficiaries in making informed choices among equitable and reasonable alternatives. "Somehow, someday, we must get individuals into the decision making process that determines if they need care and where to find the best cost care." [Ref. 46:p. 86]

Studies have shown that consumer's involvement in health care decision making is significantly correlated with level of satisfaction and functional outcome [Ref. 47:p. 1223]. Not surprisingly, these studies show that overall costs are also reduced since involved consumers are more likely to: engage in healthy behaviors, initiate effective

home health care remedies and practices, and seek medical intervention earlier in the disease process.

Therefore, we must move beyond a passive entitlement philosophy to one in which the beneficiary is an active participant. A restructured health care system which utilizes incentives and emphasizes beneficiary involvement and choice will benefit both DOD and its beneficiaries through proper use of health care services at reasonable cost.

C. DOD HEALTH CARE REFORM

As indicated in the studies in Chapter II, and as experienced in the CRI demonstration project, incentives play a powerful role in shaping the behavior of individuals. The challenge for DOD is to redesign its health care delivery system so that beneficiaries have the incentive to efficiently and economically utilize the system. The following sections describe specific changes that should be implemented to enhance awareness of cost and improve beneficiary involvement in health care decisions.

1. Achieving Equity in Benefit Structures

There are many inequities in the current MHSS benefit structure. Although the CHAMPUS benefit structure is well defined, benefit structures in the MTF's vary considerably by location and type of facility. Historically, MTF's have limited access to certain services as a result of pressures to balance their budgets and meet caseload mix requirements for

operational readiness. Furthermore, benefits available within the MTF's may be unobtainable by beneficiaries due to the time cost considerations of receiving care and administrative conditions (e.g., backlogged appointment systems) which effectively serve to ration, or limit access to, health care services.

Therefore, to achieve equity, benefit structures for both CHAMPUS and the MTF should be equalized. Benefits not available within the MTF, due to lack of service capability or projected need in excess of capacity or operational readiness, should be provided as part of a network plan. Once guaranteed access to a comparable set of benefits, beneficiaries could then make more informed comparisons of costs and benefits. By providing enhanced financial incentives for those plan options which benefit DOD, beneficiaries could be steered towards more cost-effective health care choices.

2. Incentivizing Economical Choices and Behaviors

A restructured MHSS should provide positive financial incentives for beneficiaries to seek care from managed care or network plans. Beneficiaries choosing fee-for-service health care with relatively unlimited provider choice, however, should face higher cost sharing amounts since these plans generate higher costs for DOD.

It's time to "...pose the policy issue bluntly: higher costs or fewer choices". [Ref. 48:p. 550] MHSS beneficiaries

currently have one of the most comprehensive health plans available in this country. As the nation and DOD reshape their health care policies to deal with increasing costs, choice among providers and standard fee-for-service reimbursement is likely to become more limited and more costly. Thus, this change would be politically feasible to implement since it would mirror reforms suggested for the civilian sector.

DOD should also structure the system to incentivize healthy behaviors and preventive care. This could be accomplished by waiving or limiting cost sharing requirements for preventive services, and enhancing preventive care education and health service benefits. If a health allowance was implemented to offset cost sharing requirements, such as that proposed in the HES study, the allowance could be set to reward behaviors such as regular exercising or not smoking.

3. Mandated Enrollment

Once DOD has established equitable options in terms of costs and benefits among its health care plans, beneficiaries should be required to choose one of these plans. Mandatory enrollment would ensure beneficiaries guaranteed access to a defined set of benefits at predetermined cost sharing levels. Mandatory enrollment would also provide DOD with much needed information for planning, forecasting demand and capitation budgeting, and would thus enhance cost control efforts.

Mandated enrollment would also help DOD monitor the occurrence or impact of any "ghost population" migration. The "ghost population" represents those individuals who are eligible for MHSS health benefits, but do not currently use the system. The largest part of the ghost population is comprised of retired families who hold private insurance for their medical care. If the national health care reform effort results in a standardized package of benefits that is inferior to the military benefit, it is likely that these ghost beneficiaries would increase their participation in the MHSS. Mandated enrollment would be the most effective means for monitoring and managing this trend.

Enrollment could be implemented using an open-season methodology as now occurs in the FEHBP⁷ for federal civil service workers. In this methodology, selections and changes in health plans are made once a year during a defined period. Exceptions for more frequent changes in health plan coverage could be made in cases of persons diagnosed with a major illness, family hardships, or for personnel below a specific paygrade.

4. System-wide Reforms

In order for DOD to define a standard health benefit package, guarantee access to a defined set of health care services, generate and more fully participate in health care

⁷Federal Employees Health Benefit Plan

networks, and implement a system of health plan choice through mandatory enrollment, vast structural reforms are needed. In a concept paper prepared for the Navy Surgeon General, BUMED⁸ planners and administrators cited several barriers to implementing these reforms. Among them were administrative constraints associated with personnel administration, procedural regulations, and the budget and funding processes [Ref. 49:p. 3]. Thus, if DOD were to provide a health plan competitive with those offered in the civilian sector, a significant reduction in bureaucratic regulations would be necessary to "level the playing field".

The most important problem, however, was the inability of current MHSS information management systems to support these reforms. As described in several Congressional reviews of the DOD health care system and reform efforts, this problem is a potential "show stopper". Effective implementation of managed care principles requires that patient and provider-specific data be captured for each episode of care. Existing MHSS information systems do not provide for analysis and utilization review of this level of data, and thus they must be improved. Improvement of these information systems will no doubt be very costly, but essential.

In summary, the MHSS must make significant administrative and system changes in order to implement the

⁸Bureau of Medicine and Surgery

health care reform measures described above. In response to national health care reform changes and increasing budgetary pressures to control cost growth, these system-wide changes can not be considered optional. In fact, they will be necessary for the MHSS to survive as a health care delivery system in the 1990's and beyond.

CHAPTER V. CONCLUSIONS AND RECOMMENDATIONS

A. CONCLUSIONS

DOD gained valuable insights regarding the impact of financial incentives on military beneficiary demand behavior as a result of the CRI demonstration project. The CRI project also provided DOD with insights regarding its ability to control cost growth in a contractor-operated managed care program.

As the demonstration proved, beneficiary demand is highly responsive to cost sharing changes. It also showed that beneficiaries were more likely to seek preventive health care services when these were included in the benefit package at modest cost sharing amounts. This increased use of preventive health care services is cost beneficial to DOD in the long-term and should thus be encouraged.

The CRI project also showed that a shared-risk, open-ended contract limited DOD's ability to manage utilization and contain costs. Since DOD shared the risk with the contractor, the contractor was not fully responsible for the costs of providing all health care services to participating beneficiaries. In 1988, a shared-risk contract was considered appropriate due to the newness of the contracting effort, the size of the contract, and the limited number of bidders. In

the future though, DOD should negotiate fully at-risk, capitated managed care contracts in order to better control its health care costs.

The open-ended feature of the contract allowed beneficiaries to use both contractor and MTF services at their discretion. Since MTF services are provided free or at minimal cost, beneficiaries were incentivized to make maximum use of care from both sources. As a result, overall utilization increased, and total costs to DOD from the CRI project were greater than those experienced in the control area.

Therefore, the lessons DOD learned from this experience could be summarized as follows:

- Financial incentives have a great impact on demand behavior,
- The \$5 copayment employed in the CRI project was insufficient to restrain unnecessary demand,
- Incentives, in the form of lower cost sharing and added health benefits, can be used to encourage the utilization of preventive health services,
- Allowing beneficiaries unimpeded access to both contractor and MTF sources of care increased overall utilization and thus costs,
- Utilization review efforts by themselves in a managed care environment are not sufficient to offset cost increases from vastly increased demand, and
- Beneficiaries will voluntarily participate in a managed care program if provided incentives such as lower cost sharing and additional health benefits.

These important lessons should be applied to DOD's reform of the military health care system. In the past, DOD primarily focused on controlling costs through provider incentives. The CRI experience, however, indicates that beneficiaries, rather than being passive recipients, play a key role in cost control and the health care delivery process. Therefore, factors affecting the cost-consciousness and demand behavior of beneficiaries must be addressed in any system reform efforts. Strategies, such as the use of incentives, which serve to increase beneficiary involvement and cost awareness will thus be critical to the success of DOD health care reform.

B. RECOMMENDATIONS

1. Suggestions for Future Research

Beginning in late 1993, additional data will become available from DOD's other managed care demonstration programs, namely the Catchment Area Management (CAM), TRICARE, and Gateway to Care (GTC) projects. Each of these programs varied in their approach to implementing managed care. The CAM program was implemented utilizing an enrolled population. The GTC used a modified form of capitated budgeting based on the total number of eligible beneficiaries residing in the catchment area. The TRICARE program represented the first large scale tri-service managed care delivery network.

The data from these projects should provide valuable insights to DOD on the effectiveness of managed care programs and how best to implement them. The success of each of these programs and CRI in terms of cost control and managing beneficiary demand behavior should also be compared and evaluated.

Analysis of the 1992 DOD Health Care Survey data, will also provide an updated perspective on beneficiary attitudes concerning health care benefits and costs of health care services. The results of the survey could be used to predict the acceptance and effectiveness of any potential changes in the cost sharing and benefit structures that may result from DOD's health care reform efforts.

2. DOD Health Care Reform

In the past, attempts or even suggestions to reform the military health care system were met with strong political opposition. Beneficiaries loudly voiced their concerns regarding "erosion of benefits" and politicians were reluctant to alter an established entitlement. Although opposition to reform in the military medical system should still be anticipated, the present time is ideal for DOD to proceed with its restructuring efforts. This is so because of the following events:

- Health care reform discussions at the national level have made the public aware of the problems with escalating

health care costs and the need for change in the health care system.

- Policy debates regarding the unsustainability of public commitments to entitlement spending in the face of sluggish economic growth, the public's general resistance to tax increases, and the growing federal debt.
- Promotion of national health care reform emphasizing "shared sacrifice" in which highly insured individuals would surrender some of their "excess" coverage for the benefit of the uninsured. Compared to the general public, military beneficiaries are considered to have extensive health plan coverage.
- The likely development of a national health care policy which would place more emphasis on managed care and individual involvement and responsibility in health care decision making.
- The current administration's commitment to downsizing DOD. As this occurs, comparatively less emphasis is placed on the military health benefit as a means of recruitment and retention.

As a result of these changes in the political landscape, acceptance of the sweeping reforms necessary to restructure the military health care system is more likely. These sweeping reforms will involve restructuring the health care delivery system so that beneficiaries are more cost-conscious in making their health care decisions. Incentives which support this cost-conscious behavior include cost sharing and choice among economical health plan alternatives. Also, beneficiaries will be more apt to make informed cost-conscious decisions when they are active participants in the health care delivery process.

Therefore, it is imperative that DOD's reform plan, a potential product of the underway Section 733 review⁹, be balanced. Structural changes which enhance the military benefit, such as a guaranteed, defined benefit package, improved access and choice, and lower cost sharing, must be balanced against those changes requiring cost-conscious behavior on the part of the beneficiary.

If key features of the reform proposal designed to enhance beneficiary cost-consciousness were not accepted and dismissed as politically unpalatable, DOD would risk increasing its overall costs as initially occurred in the CRI demonstration project. Past experience within DOD and current demonstration projects indicate that cost control can not be achieved without beneficiary awareness of costs and active participation in the health care delivery process.

Finally, as a result of the discussions of national health care reform and the changing political landscape, DOD has a unique and very important responsibility to substantially reform its health care system. Care should be taken to effectively redesign the system so that the military health benefit for active forces, veterans and their families is preserved. Failure to do so could result in the military health care system being assimilated into a national health

⁹In Section 733 of the National Defense Authorization Act for Fiscal Years 1992 and 1993, Congress required DOD to submit a plan for reform of the military health care system.

care plan providing lesser benefits, much to the detriment of those who have served their country proudly.

APPENDIX A
Summary of Benefits and Coverage for CRI Options

	Standard CHAMPUS	CHAMPUS Prime	CHAMPUS Extra
Annual Deductible	<u>Junior enlisted:</u> \$50 individual, \$100 family. <u>Others:</u> \$150 individual/ \$300 family	None	Same as standard
Physician services copayment: Active duty dependents ----- Retired and dependents	20% CHAMPUS allowable ----- 25% CHAMPUS allowable	\$5 per visit ----- \$5 per visit	15% plan allowable ----- 20% plan allowable
Outpatient mental health copayment: Active duty dependents ----- Retired and dependents	20% CHAMPUS allowable ----- 25% CHAMPUS allowable	\$10 individual and \$5 group visit. ----- \$10 individual and \$5 group visit.	15% plan allowable ----- 20% plan allowable
Preventive services	None except well baby care and routine eye exams	Routine physical exams, pap smears, and similar preventive care	Same as standard
Hospitalization copayment: Active duty dependents ----- Retired and dependents	Greater of \$25 per admission or MTF inpatient per diem charges ----- Lesser of \$210/day or 25% of charges	Same as standard ----- \$75/day to \$750 maximum per admission	Same as standard ----- Lesser of \$125/day or 25% of charges

APPENDIX A
Summary of Benefits and Coverage for CRI Options
(Continued)

	Standard CHAMPUS	CHAMPUS Prime	CHAMPUS Extra
Prescription copayment: Active duty dependents	20% CHAMPUS allowable	\$4 copay up to 30-day supply	15% plan allowable
----- Retired and dependents	----- 25% plan allowable	----- \$5 copay up to 30-day supply	----- 20% plan allowable
Providers covered	Free to use any CHAMPUS participating provider	Must use network providers while enrolled	Must use network providers for particular episode of care; no enrollment
Paperwork required	Beneficiary files own claim	No beneficiary claims filing	No beneficiary claims filing

NOTE: Prime copayments for primary care and preventive services are not required for dependents of active duty members with pay grades E-4 and below.

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